

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE STATEMENT

Applicant: James L. Barnard

Date:

For: PROCESS FOR IMPROVING PHOSPHORUS REMOVAL IN WASTE WATER  
TREATMENT WITHOUT CHEMICAL ADDITION

\* \* \* \* \*

Kansas City, Missouri

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

Applicant is aware of the following references listed on the  
attached PTO-1449, copies of which are enclosed:

U. S. Patents

<u>Patent No.</u>	<u>Date</u>	<u>Patentee</u>
6,344,143	02/05/02	Ahn, et al.
6,338,800	01/15/02	Kulperger, et al.
6,312,599	11/06/01	Reid
6,139,743	10/31/00	Park, et al.
6,030,528	02/29/00	Han
5,942,108	08/24/99	Yang

James L. Barnard

PATENT

5,733,456	03/31/98	Okey, et al.
5,601,719	02/11/97	Hawkins, et al.
5,266,200	11/30/93	Reid
5,228,996	07/20/93	Lansdell
4,917,805	04/17/90	Reid
4,507,207	03/26/85	Verhoeve, et al.
4,500,429	02/19/85	Reimann, et al.
4,488,967	12/18/84	Block, et al.
4,415,454	11/15/83	Fuchs
4,183,808	01/15/80	Drnevich
3,964,998	06/22/76	Barnard
3,385,785	05/04/66	Forrest, et al.
3,236,766	03/31/64	Levin

OTHER DOCUMENTS

South Cary Water Reclamation Facility's Nutrient Removal

Modifications and Reduction Success, Town of Cary, North  
Carolina, Publication Date: 2001.

Evaluation of Several Water Reclamation Facilities Employing

Biological Nutrient Removal in North Carolina, Publication  
Date: November 2001.

James L. Barnard

PATENT

New BPR Process Achieves High Phosphorous Removal Levels,

Publication Date: October 1994.

Conference on New Directions and Research in Waste Water and

Residuals Management the Role of Full Scale Research in

Biological Phosphate Removal, James L. Barnard.

Fermentation of Return Activated Sludge to Enhance Biological

Phosphorus Removal, Publication Date: 2002.

Exhibit 1 shows rough schematic drawings of certain wastewater treatment facilities and the names of the facility or general name for which the shown process is known. These drawings are not intended to be complete, but rather show the intended process. The first date of offer for sale or disclosure of the shown processes is not known.

The above-listed references are, in the belief and opinion of the undersigned, the closest art of which the applicant is aware as of the date of execution of the Declaration in the above-captioned application.

Respectfully submitted,

February 27, 2004  
Date

James L. Barnard.  
James L. Barnard, Inventor

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	
				Filing Date	
				First Named Inventor	James L. Barnard
				Art Unit	
				Examiner Name	
Sheet	1	of	3	Attorney Docket Number	10,158

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		US-6,344,143	02/05/02	Ahn, et al.	
		US-6,338,800	01/15/02	Kulperger, et al.	
		US-6,312,599	11/06/01	Reid	
		US-6,139,743	10/31/00	Park, et al.	
		US-6,030,528	02/29/00	Han	
		US-5,942,108	08/24/99	Yang	
		US-5,733,456	03/31/98	Okey, et al.	
		US-5,601,719	02/11/97	Hawkins, et al.	
		US-5,266,200	11/30/93	Reid	
		US-5,228,996	07/20/93	Lansdell	
		US-4,917,805	04/17/90	Reid	
		US-4,507,207	03/26/85	Verhoeve, et al.	
		US-4,500,429	02/19/85	Reimann, et al.	
		US-4,488,967	12/18/84	Block, et al.	
		US-4,415,454	11/15/83	Fuchs	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	
				Filing Date	
				First Named Inventor	James L. Barnard
				Art Unit	
				Examiner Name	
Sheet	2	of	3	Attorney Docket Number	10,158

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		US-4,183,808	01/15/80	Drnevich	
		US-3,964,998	06/22/76	Barnard	
		US-3,385,785	05/04/66	Forrest, et al.	
		US-3,236,766	03/31/64	Levin	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number		
			Filing Date		
			First Named Inventor	James L. Barnard	
			Art Unit		
			Examiner Name		
Sheet	3	of	3	Attorney Docket Number	10,158

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue numbers(s), publisher, city and/or country where published.	T <sup>2</sup>
		South Cary Water Reclamation Facility's Nutrient Removal Modifications and Reduction Success, Town of Cary, North Carolina, Publication Date: 2001.	
		Evaluation of Several Water Reclamation Facilities Employing Biological Nutrient Removal in North Carolina, Publication Date: November 2001.	
		New BPR Process Achieves High Phosphorous Removal Levels, Publication Date: October 1994.	
		Conference on New Directions and Research in Waste Water and Residuals Management the Role of Full Scale Research in Biological Phosphate Removal, James L. Barnard.	
		Fermentation of Return Activated Sludge to Enhance Biological Phosphorus Removal, Publication Date: 2002.	
		EXHIBIT I - VARIOUS TREATMENT FACILITIES, DATES UNKNOWN	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.